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December 17 , 2018

John R. Kasich, Governor

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U. S. Environmental Protection Agency

EPA Docket Center

U.S. EPA Docket ID No .: EPA-HQ-OAR-2017-0483

Mail Code 28221T

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Washington DC 20450

Dear U.S. EPA Administrator:

On October 15, 2018, U.S. EPA published proposed revisions to the New Source Performance Standards (NSPS)

for the oil and gas sector found under 40 CFR part 60, subpart OOOOa . This proposal was in response to

petitions for recons ideration on the 2016 NSPS OOOOa . As part of this proposal, U.S. EPA solicited comments

from interested parties concerning the proposed changes. Ohio EPA has reviewed the proposal and has the

following comments.

General Comments

In general, Ohio EPA is supportive of many of the proposed changes and finds many of them add clarity to the

rules which leads to better understanding and better compliance . In other instances, we have

re commendations to improve the rule . We explain those instances below.

Paragraph VI. Discussion of Provisions Subject to Reconsideration

A. Pneumatic Pumps

Ohio EPA agrees that the technical infeasibility provisions should apply to both greenfield and non-greenfield

well sites. This approach will help simplify the requirements by making the requirements consistent between

greenfield and non-greenfield sites. It also eliminates the difficulty in determining when a site is greenfield and

when it becomes a non -greenfield site.

B. Fugitive Emissions from Well Sites and Compressor Stations

1. Monitoring Frequency

First, Oh io EPA appreciates that U.S. EPA recognizes Ohio's Leak Detection and Repair Program (LDAR) found in

Ohio's general permits to be at least as stringent as U.S. EPA's proposal such that U.S. EPA is proposing to

approve Ohio's program as an alternative standard. Ohio has been one of the leading states in implementing a

quality LDAR program for oil and gas facilities. We continue to believe that it is important to have a program

that can timely identify leaks, so they can be repaired quickly. Recognizing the Ohio EPA program as an

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acceptable alternative compliance program is protective of the environment and eliminates unnecessary

duplication.

For other state programs, Ohio EPA is in favor of adjusting the monitoring frequency based on the potential

amount of leak emissions. Facilities that have low flow or have few components are less likely to leak significant

emissions. It, therefore, makes sense to monitor these smaller facilities less frequently.

U.S. EPA is proposing to delineate the frequency of monitoring based on the barrels of oil equivalent (boe) per

day averaged over the first 30 days of production at well sites. Ohio EPA has concerns about using the first 30

days of production as the trigger for the frequency of monitoring because the production of a well site can

significantly vary with time as flow conditions change, and as outgoing pipelines or other services become

available. This variation in production could mean the actual production could vary widely and, at times, could

be significantly more or less than the first 30 days of production. Having the frequency of monitoring set based

on the initial production does not make sense when the flow changes significantly.

Ohio EPA believes it would be better to base the frequency of inspection on the number of components that can

leak, rather than the production data. Operators should be designing their systems to handle the expected

maximum flow. This, in turn, means they will know the number of flanges, pumps, or other leaking components

that could be used as a threshold for the frequency of inspection. The frequency will then be based on the

expected maximum flow based on the design of the system, rather than what the well sites happens to produce

during the first 30 days. We also believe that the frequency of inspection should be allowed to change if the

number of components change. This would better align the frequency of inspection with the likelihood of

leaking equipment.

Ohio EPA currently required well sites to initially monitor quarterly with the ability to reduce the frequency if

few leaks are found. This approach encourages operators to self-monitor outside of the required monitoring

which tends to identify leaks sooner and can result in reduced emissions. Operators have successfully met this

frequency approach and have not approached Ohio EPA to request less frequent monitoring.

Model Plant Analysis

Ohio EPA has evaluated the Ohio well sites to determine our own "model" facility. Our model facility is an

accounting of the average number of components found at Ohio facilities. We calculated these numbers based

on data from the Ohio Department of Natural Resources (ODNR) well counts compared to our counts of well

sites. We then calculated Ohio's model facility counts by using the Subpart W default component counts.

Although we did not attempt to evaluate storage tanks directly, for the other components, Ohio's model facility

consists of the following counts:

Model Plant Average Component Count Per Unit of Production

Average Component Count Per Model Plant

Production Production Eauioment

Equipment Equipment

Valves Flanges Connectors OELs PRVs Valves Flanges Connectors OELs PRVs

Counts

Ohio Well Pad Model Site

Well Heads 3.6 5 10 4 0 1 18 36 14 0 4

Separators 3.6 6 12 10 0 0 22 43 36 0 0

Headers 3.6 5 10 4 0 0 18 36 14 0 0

Heater /Treater 3.6 8 12 20 0 0 29 43 72 0 0

In-line Heater 3.6 14 0 65 2 1 50 0 235 7 4

Meters/Piping 3.6 12 0 45 0 0 43 0 162 0 0

Total 180 158 533 7 8

In terms of storage vessels, when Ohio EPA developed a general permit for well sites, we had to determine the

upper storage vessel capacity most well sites would contain. Based on this analysis and discussion with

operators, we established upper limits of:

• each of the condensate storage tanks have a capacity of less than 39,894 gallons (950 barrel), and

• the combined capacity of all condensate, natural gas liquid, crude oil, and produced water storage

vessels installed be no more than 252,000 gallons (6000 barrels)

Based on simple math assuming all storage tanks are at the maximum size of 39,894 gallons, the average

number of tanks would be 252,000 I 39,894 = 6.3 tanks. This value represents the upper limit of large tanks a

facility could install and still get our general permit. We think that these restrictions allow most well sites to

obtain our general permit. However, we also expect a few facilities will need more capacity than envisioned by

the general permits. In those cases, the operator would need to obtain a traditional, case-by-case permit, rather

than the general permit.

We have also found that the number of storage vessels needed can vary widely depending upon the "wetness"

of the well that is drilled.

Monitoring Frequency

Ohio EPA has spent some time analyzing how the frequency of leak inspection/repair effects the overall

emissions. We did this analysis to try to understand the difference between our early well site leak detection

program that required annual inspection, to our later well site leak detection program that required quarterly

inspection. In general, the calculation we use assumes that the frequency of failure (leak state) is constant for a

type of component and based on the frequency of failure, we can calcu late the fraction of the components that

have failed over any given time frame. This can then be used to calculate an aggregate leakage rate for the type

of component over a certain time which can then be used to calculate emissions at different inspection

frequencies. For a more detailed description of the process Ohio EPA has developed, see the attached

documents:

• Wei/SiteLDAREffectiveness20180924.pdf- this is a high-level memo we sent to our director discussing

the results of or work to calculate the effectiveness of our LDAR program. I suggest people read this first

to get an idea of the overall project, some of the assumptions we made, and some of the areas we did

not try to cover.

• Estimated Effect of Inspection Frequency ... doc- This draft document that gives some of the details of

the methodology we used to do the calculations.

• Inspection Analysis_dkt16MH.xlsx- This Excel spreadsheet contains the cur rent version of the

spreadsheet that does the actual calculations for Ohio sites.

The one area that Ohio EPA is not clear on concerns the emission factors used for leaking components. We used

leaking emission factors from the Greenhouse Gas Reporting Program (GGRP) (under 40 CFR Pa r t 98 Subpart W) ,

but it is unclear to us if these factors adjust for the " super leaker" phenomenon where one leak cou ld result i n

an overwhelming amount of emission . Ohio asks U.S . EPA to clarify the ass umptions con cerning the GGRP

emission factors and how they account for the super leaker phenomenon.

Reduced Frequency for Wellhead Only Si t es

Ohio EPA agrees that wellhead only sites should not be required to conduct periodic leak detection. Wellhead

only sites have few components that could leak and no other equipment that would normally have any

emissions. Ohio EPA is likely to consider them de minimis such that no permit would be needed .

Low Production Well Sites

Ohio EPA also agrees that well sites with low production may also warrant reduced leak check requirements.

We do not have a recommendation on a production rate to determine if a facility is too small to require leak

checking . Instead, we recommend the threshold be based on the number of components that could leak .

Monitoring Frequency for Compressor Stations

Ohio EPA currently requires mid-stream compressor stations to monitor quarterly. Operato rs have succ ess fully

met this frequency . We have not conducted a cost-effectiveness study for different frequencies of LDAR

inspection at compressor stations. However, the same methodology we used for calculating fug itive emissions

from components for well sites we discussed above could be used for compressor stations. One of the

challenges to this calculation is that the number of components located at a compressor station can vary widely

depending upon how " wet" the gas is. If the gas contains many " wet" components, then equipment is needed

to remove these components before the gas can be compressed and inserted into the pipeline . This means an

increase in the number of components that could leak at the compressor station.

2. Modification of Well Sites

Ohio EPA agrees that drilling a new well at an existing well site, hydraulically fracturing a well at an exist ing well

site or hydraulically refracturing a well at an existing well site are activities that will significantly increase the

production rate of a well site . We agree that these events are significant enough to trigger the NSPS well-site

modification definition.

3. Initial Monitoring for Well Sites and Compressor Stations

For well sites, Ohio EPA' s well site general permit requires initial monitoring to be completed within 90 days of

startup. For mid-stream compressor stations, Ohio EPA' s leak detection general permit requires initi al

monitoring to be completed within 60 days .

Ohio EPA developed the well site general permits prior to the issuance of NSPS OOOOa in 2016 with its 60-day

threshold. The 90 days from startup threshold was determined based on negotiation with industry

representatives. Ohio EPA understands that the additional 30 days was helpful to industry simply because

during start-up of a facility, there is a very large work load for operators and additional time helps spread out

the work. At this point, Ohio EPA believes that 60 days is sufficient because most operators have developed all

of the internal procedures to implement the program quickly.

5. Repair Requirements

Ohio EPA is in favor of the new definitions of "repaired" and " first attempt at repair" and the additional

clarifications.

C. Professional Engineer Certifications

U.S. EPA is considering allowing an in-house engineer with expertise on the design and operation of the CVS or

pneumatic pump to certify the design for CVS' or technical infeasibility for pneumatic pumps instead of having a

"qualified professional engineer (PE)" . Ohio EPA has significant concerns with this approach . Our concerns

include:

• Ohio EPA has seen numerous examples of under designed CVS systems that cannot handle peak flow

which results in significant emissions from storage vessels as either the thief hatch pops open or the

pressure relief valve vents the excess gas. Operators have often used standard CVS designs without

confirming the standard design will be able to handle the peak flow from the particular well site. These

standard designs were approved by in-house personnel. This approval process has failed to result in

properly designed CVS systems.

• These under-designed systems have resulted in significant excess emissions and have resulted in

significant adverse impacts to citizens living near these facilities.

• It is unclear what U.S. EPA considers an "in-house engineer with expertise on the design and operation."

Does the engineer need to have X number of years' experience? Does he/she need experience in

designing these systems or just general engineering type experience? Since this term is not defined, it

will not be clear if an employee is qualified for this work and it will not be clear to the regulated

community which employee is qualified to complete the work.

• Utilizing a qualified PE ensures that the individual doing the design review has the fundamental training

and experience to properly evaluate the design .

Because of these reasons, Ohio EPA recommends U.S. EPA retain the qualified PE requirement.

D. Alternative Means of Emission limitation (AMEL)

2. Incorporating State Programs

U.S. EPA is proposing to approve several state' s fugitive emissions standards, including Ohio' s, as an AMEL. Ohio

EPA appreciates U.S. EPA's recognition that Ohio' s well site and compressor station leak detection and repair

programs are at least as stringent as U.S. EPA's proposed NSPS. Ohio has been one of the leading states in

developing quality LDAR programs. We support U.S. EPA' s proposal to approve Ohio ' s program as an AMEL.

E. Other Reconsideration Issues Being Addressed

3. Closed Vent Systems (CVS) and Storage Vessel Thief Hatches

Ohio EPA believes that storage vessel thief hatches should be treated like other components that could develop

leaks as the equipment wears and that a no detectible emission limits is not practical. The equipment should

normally not leak, but when wear occurs, leaks will happen. Ohio EPA' s expectation is that the LDAR program

should be used to identify leaks from the thief hatches so that they can be repaired on a timely basis.

Wear related leaks, however, are different than leaks associated with popped hatches due to over

pressurization. Hatches popping open due to over pressurization are typically an indicator of under designed

CVS' and are not typically due to wear related issues.

Summary

Thank you for the significant work that has gone into proposing revisions to NSPS OOOOa. We appreciate the

opportunity for providing comments. If you have any questions on any of Ohio EPA' s comments, please contact

Mike Hopkins at 614-644-3611 or mike.hopkins@epa .ohio.gov.

Sincerely ,

Director

MH/

Enclosures (3)

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